PB-217 713

A REVIEW AND APPRAISAL OF AIR POLLUTION LEGISLATION IN THE UNITED STATES

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Public Health Service
Washington, D. C.

1957

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U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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A REVIEW AND APPRAISAL OF AIR POLLUTION LEGISLATION IN THE UNITED STATES

by

Samuel M. Rogers

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Public Health Service

Bureau of State Services
Division of Sanitary Engineering Services
Air Pollution Engineering Program

For presentation by Samuel M. Rogers at the Golden Jubilee Meeting of the Air Pollution Control Association, St. Louis, Missouri, June 4, 1957.

A Review and Appraisal of Air Pollution Legislation in the United States

HISTORICAL

Historically, the anti-smoke regulations of England, drawn up in the 14th Century, might be considered the earliest recorded legislation dealing with an air pollution problem. During the latter half of the 19th Century the problem of smoke in many American and European cities was sufficiently serious to result in the establishment of various smoke commissions to inquire into the causes and prevention of smoke.

Although there had been private litigation with regard to smoke in St. Louis as early as 1864, the first ordinance in this country, giving specific authority to a local government to regulate it, was adopted by Chicago in April 1881. Cincinnati adopted a smoke ordinance in November 1881, and St. Louis in 1893. By 1912, 23 of 28 cities with more than 200,000 population had smoke abatement programs.

The great impetus in the enactment of air pollution control legislation occurred shortly prior to and following World War II. Comprehensive control of air contaminants is a fairly recent development and over 80% of all present municipal air pollution abatement ordinances reviewed have been enacted in the last 15 years (Table I). It becomes readily apparent that such legislation occurred as a result of a tremendous industrial growth along with a rapid population growth of our larger cities. The reaction to the problem of air pollution in many areas was the enactment of control legislation. Unfortunately, however, many of our laws on the subject of air pollution are antiquated and lack adequate factual substantiation. This occurred in spite of the research that was undertaken during

110 CITIES WITH AIR POLLUTION ORDINANCES BY

*YEAR OF PRESENT ORDINANCE ADOPTION

Population Group	1911-1920	1921-1930	1931-1940	1941-1950	1951-1956
Under 50,000	1	2	3	7	13
50,000-99,000	1	3	3	8	9
100,000-199,000		1		7	9
200,000-499,000				7	6
500,000-999,000			3	4	2
1,000,000 & over			1	3	3

* Note: The date used is that of the most recent ordinance adoption.

TABLE #1

the early decades of this century. It appears, therefore, that a considerable lag period ensued between the completion of the studies and the acceptance and application of the results by communities. In this connection, the need for determination of basic criteria of air cleanliness in the community atmosphere still exists. Such criteria, whenever possible, should best be based on definite scientific data and considered in relation to the significance of all the pollutants present. Obviously, in those areas where significant air pollution problems exist, interim control activities, based on the best information available, should be inaugurated.

LEGISLATIVE MATERIAL REVIEWED

The legislative materials utilized for this review were obtained in response to a questionnaire distributed in the early part of 1956 by the Air Pollution Control Association in connection with the preparation of a "Directory of Smoke and Air Pollution Control Agencies." The air pollution legislation of 110 cities forms the basis of this review. In addition, certain aspects of air pollution legislation in seven States is briefly presented. However, before the findings are presented in detail, it is desirable at this point to consider certain legal aspects which provide the basis of much of the legislation enacted thus far.

LEGAL ASPECTS OF AIR POLLUTION CONTROL

The governmental structure of the United States is based on the Constitution. In this durable document, the States are established as the primary entities for the enactment of legislation governing the activities of our citizens. The role of the Federal Government is set

forth generally as one of providing for those matters most properly treated by a single agency as the representative of the several States. The Tenth Amendment, a part of the Bill of Rights, adopted in 1791, four years after the ratification of the Constitution, specifically reserves for the States or the people the right to exercise all powers not delegated to the Federal Government.

States, under the powers reserved for them as previously mentioned, may undertake to provide for the control of air pollution through the use of the common law relating to nuisances (common law being a code of practice resulting from court decisions and custom). Such actions are cumbersome and, in addition, there is no course of action available to the enforcement official to require the control of the situation by employment of suitable engineering techniques, especially upon initial construction.

States also may be construed to have the power to declare certain acts or situations to be nuisances which are not such at common law. To declare air pollution or the emission of pollutants into the atmosphere to be a nuisance simplifies the control action just described by eliminating the necessity of proving the existence of a nuisance in each case.

The police power available to States merits serious consideration as the basis for a control program. Under these powers, laws may be enacted to provide for the regulation of human behavior, the conduct of business, the use of property, and so on, with reference to the maintenance of public order, and the protection of the public health, safety, morals, and order. Under these very broad, but not unlimited powers, a program

can be provided which will effectively bring about control of air pollution. Reasonable requirements can be established regulating emission of pollutants, use of equipment, processes and materials, plan approval and permit systems, and other facets of a suitable air pollution ordinance. Such a law need not be based on past findings, court decisions, or custom, but can be originally established in accordance with the desires of the public expressed through their official representatives and maintained by suitable amendments to the law or by revision of rules and regulations, if such are provided for.

There are two general legal approaches to air pollution control by local communities; i.e., public nuisance and specific legislation. In the absence of specific legislation, control of a source of pollution can be effected in practically every jurisdiction in the United States by proving to the satisfaction of the court that it creates a public nuisance. Air pollution per se is not considered a common law nuisance unless it is proved to interfere materially with the enjoyment of life and property.

Nuisances are further classified as first, nuisances "per se," i.e., those acts which have been so designated by common law or statute; second, acts which in their nature are not nuisances but may become so by reason of their locality, surroundings, or manner in which they may be conducted; and third, those which in their nature <u>may</u> be nuisances but as to which there may be honest difference of opinion in impartial minds. However, no activity which cannot be shown to be a nuisance in fact, may rightfully be declared to be a nuisance "per se" by a legislative body, nor may a State or municipality authorize by law an act which can be shown to be a nuisance.

FINDINGS

The legislation under study revealed a multiplicity of local governmental agencies responsible for the administration of air pollution control legislation (Table 2). Although six agencies are indicated as the principal ones, we find that there were 18 communities which utilized other local agencies, and 18 communities did not designate any specific agency in their ordinance. Of the ordinances reviewed, approximately 40 per cent designate their Department of Public Safety, Building Department, or Health Department as the enforcement agency. Other departments following closely in frequency of designation are the Departments of Public Works and specifically created Departments of Air Pollution Control. It appears that the choice has almost always been to seek an existing municipal agency and add air pollution control to its other duties.

A solution becoming more frequently utilized is the establishment of an Air Pollution Control District. This procedure has been successful in areas involving large or small communities and varying proportionate combinations. It offers a number of distinct advantages which may be listed as follows:

(1) Full-time air pollution control program.

(2) Per capita cost per square mile of coverage is less.

(3) Control of community air pollution sources from beyond community boundaries.

(4) Community awareness and interest.

Properly drafted legislation will delineate the scope of responsibility of the administrative agency and, in turn, such responsibility determines the type of agency most suitable to carry out the program of

ADMINISTRATIVE AIR POLLUTION AGENCY

IN 110 CITIES HAVING AN AIR POLLUTION ORDINANCE

Population Group	Health	Dept. of Public Safety	Building Dept.	Dept. of Public Works	Dept. of A.P. Control	A.P. Control District	Other	None	Total
Under 50,000	2	6	4	4	2	-	6	8	32
50,000 - 99,000	2	2	3	3	3	2	4	7	26
100,000 - 199,000	2	4	-	3	4	-	4	2	19
200,000 - 499,000	1	6	3	2	-	1	2	1	16
500,000 - 999,000	2½	2	1	½	2	1	1	-	10
1,000,000 & Over	1	-	1	-	1	3	1	-	7
% of Total	10	18	11	11	11	6	16	16	

TABLE #2

air pollution control. To carry this consideration one step further, we must recognize that in the drafting of legislation there is usually a balancing of equities which may affect the scope of administrative control activities.

Enforcement Agent:

Many of the ordinances reviewed specifically indicate the official responsible to the administrative agency for enforcement of air pollution control legislation (Table 3). In certain instances, the legislation indicates the bureau or agency responsible for enforcement rather than indicating a specific official. The air pollution control legislation reviewed indicates that approximately 14 per cent specified an enforcement officer other than one of those listed on Table 3 and that at least 11 per cent made no specific provision as to who the enforcement officer would be. The enforcement officers appearing most frequently in the legislation were (a) Air Pollution Control Engineer (17%); (b) Bureau of Air Pollution Control (13%); and (c) The Commissioner of the Department acting as the administrator of the program (9%).

Duties of the Air Pollution Control Officer:

Sound administrative practice dictates that the duties of the Air Pollution Control Officer be specified for purposes of clarity in the ordinances of the respective communities. It will be observed that regardless of community size with respect to population generally the principal duties of the Air Pollution Control Officer are as follows:

a. The investigation of complaints and the investigation and observation of air pollution conditions.

ENFORCEMENT OFFICER DESIGNATION

IN 110 CITIES HAVING AN AIR POLLUTION ORDINANCE

Population Group	A.P. Control Engineer	Health Officer	Smoke Abatement Insp.	Bureau of A.P. Control	Department Commissioner	Building Inspector	Other	None
Under 50,000	2	2	7	2	2	3	8	6
50,000-99,000	5	2	5	1	1	3	4	5
100,000-199,000	4	1	-	5	2	2	4	1
200,000-499,000	5	1	3	2	2	2	1	-
500,000-999,000	1	1½	3½	3	-	-	1	-
1,000,000 & Over	2	1	-	1	3	-	-	-
% of Total	17	8	16	13	9	9	16	11

TABLE #3

b. The examination of plans and specifications for new construction and reconstruction or alteration of fuel-burning equipment and issuance of installation permits.

c. Inspection of new installations and issuance of operating permit or certificate.

d. Enforcement of provisions of the ordinance, orders, rules, and regulations.

Other duties may be the dissemination of information to the public, inspection of existing installations, conduct of research, technical assistance, and the development of rules and regulations. In general, the duties are those related to abatement and prevention of air pollution problems. It is significant to note, however, that although it may be implied, there is rarely any specific mention of the need for development of a broad program to secure compliance with the ordinance provision concerned.

Definitions:

Our review reveals that 78 per cent of all air pollution control ordinances under study contain a section dealing with the definition of specific terms (Table 4). It is significant to note that although communities of over a half million always provide for a section on definitions, many of the smaller communities fail to do so. In the group of communities of less than 50,000 population, only 53 per cent of the ordinances contain a section of definitions.

The inclusion of suitable definitions is of major importance to the successful implementation of an ordinance. Failure to do so results

DEFINITIONS IN AIR POLLUTION ORDINANCES OF 110 CITIES

Population Group	Provided	% of Group Providing	None
Under 50,000	17	53	15
50,000 - 99,000	20	77	6
100,000 - 199,000	17	89	2
200,000 - 499,000	15	94	1
500,000 - 999,000	10	100	0
1,000,000 & Over	7	100	0

Approximately 78% of the ordinances reviewed provided a section defining certain terms used in the ordinance.

TABLE #4

many times in dispute as to intent and scope of the ordinance provision requiring both legal and administrative interpretation. It is most desirable that the ordinance be prepared in the clearest terms possible so that intent is apparent and not subject to misinterpretation.

Boards--(Advisory, Appeal, Hearing, etc.):

The extensive utilization of advisory and appeal boards in addition to affording a device for the holding of hearings by the administrative or enforcement officer reflects the level of development of knowledge concerning air pollution control and the consequent broadening of the base of administrative responsibility. Concerted efforts to control air pollution are of relatively recent origin and there has been no extensive backlog of data upon which to make objective determinations. In those areas where measurements of one type or another are made, they must be interpreted along with other factors which are not adequately measured and are at times subjectively determined. This has led to the practice of using boards which may advise the control officials as to program and enforcement actions and other boards which hear appeals on actions of enforcement officials. Certainly the use of boards is a safety device to assure a reasonable and nonarbitrary approach to air pollution control. In some communities the advisory and appeal functions are incorporated in one and the same board. Most communities which use an advisory board also delegate to that board the responsibility of approving the rules and regulations developed by the Air Pollution Control Officer. Of the 32 communities having less than 50,000 population, whose ordinances were reviewed, only 31 per cent provided for a board of any type; however,

in the larger population groups greater use is made of various boards (Table 5). Usually all the more elaborate programs provide for appeal to a hearing board. Generally the agency with the right to summon witnesses and put them under oath must guarantee rights of counsel and give a 10-day notice of hearing. Some programs also allow the appeal board wide discretion in granting variances from the air pollution regulations, especially when the consequences of not granting the variance may prove disastrous to the industry in question or affect the community's economic stability.

Smoke Emission Prohibitions:

Most air pollution control ordinances describe dense smoke and declare such smoke a nuisance. It is apparent from Table 6 that the most commonly accepted standard for determining the density of smoke emissions is the Ringelmann Chart. In some communities it is permissible to use any other chart or standard having equivalent shades of grey, when viewed at the intended viewing distance for each. Other instruments or devices permitted are the micro-Ringelmann Chart, the Smoke Scope, and Umbrascope.

Smoke emission density limits most commonly employed are of two types:

a. Those ordinances which prohibit emissions equal to or greater than #2 of the Ringelmann Chart except for limited periods for fire cleaning or building when no specific limit is established. This provision occurred in approximately 46 per cent of the ordinances (Table 6).

b. Those ordinances which permit #2 smoke at all times and in excess of #3 for limited periods during fire cleaning or

PROVISION FOR BOARDS

IN AIR POLLUTION ORDINANCES OF 110 CITIES

Population Group	APC - Boards				Special Boards					Other	None	% of Group
	a	b	c	ab	a	b	c	ab	abc			
Under 50,000		1			2	3	2	1		1	22	31
50,000 - 99,000	1	2-1/2	1/2		1	6			3	1	11	58
100,000 - 199,000	1/3		1/3	2-1/2	1	5-1/3	1/2	2	1	2	4	79
200,000 - 499,000				1	2	3	1	1	1		7	56
500,000 - 999,000		1-1/2	1/2			2		2	1	1	2	80
1,000,000 & Over		1/2	2-1/3		4/5	4/5	1/2		1		1	86
TOTALS	1-1/3	5-1/2	3-2/3	3-1/2	6-4/5	20-1/10	4	6	7	5	47	

Approximately 53% of the communities provide one or more boards in accordance with ordinance requirements.

TABLE #5

Note: a - Advisory
b - Appeal
c - Rules & Regulations

"SMOKE" STANDARDS CLASSIFICATION

OF 110 CITIES HAVING AIR POLLUTION ORDINANCES

Population Group	II		III		V	VI	VII	VIII	None
	A	B	B	C	B				
Under 50,000	2	8		9		1	2	4	6
50,000 - 99,000	1	14	2	6	1	1	1		
100,000 - 199,000	1	11	1	4				1	1
200,000 - 499,000	2	10		4					
500,000 - 999,000	1	5	1	1		1			1
1,000,000 & Over	3	3	1						

Approximately 93% of the ordinances reviewed provided for a smoke emission density limitation.

TABLE #6

Note: See Footnote Page

Footnote: (Table #6)

Definition of Ordinance Classifications
Based on the Measurement of Smoke Density

Class II: Ordinances which allow short periods of No. 2 smoke:

A. But may not exceed No. 3 for stated periods for fire cleaning or building.

B. And may exceed No. 3 for stated periods for fire cleaning or building.

Class III: Ordinances which allow No. 2 smoke at all times:

A. But may not exceed No. 2 at any time.

B. But may not exceed No. 3 for fire cleaning or building.

C. And may exceed No. 3 for fire cleaning or building.

Class V: Ordinances which allow No. 3 smoke at all times:

A. But may not exceed No. 3 at any time.

B. And allow periods in excess of No. 3 without specifying or in addition to fire cleaning or building.

C. And may exceed No. 3 for fire cleaning or building.

Class VI: Ordinances which define smoke density using the Umbrascope and not in terms of the Ringelmann Chart.

Class VII: Ordinances which do not, or only loosely, define the smoke density prohibited.

Class VIII: Table establishes limits on basis of type and size of installation.

Ringelmann Chart. This is the most widely used method and was sponsored by the U. S. Bureau of Mines. The smoke density is expressed on a scale of 0, 1, 2, 3, 4, and 5. No. 1 smoke allows 80% of the transmitted light to pass through, No. 2 allows 60%, No. 3 allows 40%, No. 4 allows 20%, and No. 5 allows none of the transmitted light to pass through.

building. This provision appeared in 22 per cent of the ordinances reviewed (Table 6).

Although not presently included in a large number of ordinances, much new impetus has developed which would include a prohibition of smokes other than black or grey. It would prohibit emission of air contaminants of such opacity as to obscure an observer's view to a degree equal to or greater than the smoke prohibited by the use of the Ringelmann Chart.

A rather recent innovation involves the use of a table of permissible smoke emissions on the basis of the type and size of source and location. This procedure offers a rational approach to the problem of smoke emissions and its effectiveness may be enhanced when employed in conjunction with suitable zoning regulations.

Particulate Matter Emission Prohibitions:

A study of Table 7 reveals a rather wide variety of dust emission prohibitions principally resulting from various processes of combustion. There are two limits of emission which account for 50 per cent of those communities having an ordinance provision dealing with this item. These provisions are:

a. Dust or fly ash emission limitations of not in excess of 0.85 lbs. per 1,000 lbs. of stack gases adjusted to 50 per cent excess air (11 per cent Table 7); and

b. Dust emissions not in excess of 0.85 lbs. per 1,000 lbs. of stack gases adjusted to 12 per cent carbon dioxide (CO_2) (12 per cent Table 7).

PARTICULATE MATTER - (STANDARDS)

OF 110 CITIES HAVING AIR POLLUTION ORDINANCES

Population Group	1	2	3	4	5	6	7	8	9	Other	None
Under 50,000			3	1	1			3	1	3	20
50,000 - 99,000	1	1	2					1		2	21
100,000 - 199,000	1	1	3	1	1	3				1	10
200,000 - 499,000			2	1		1	1	6		0	5
500,000 - 999,000	1	1	1			1		2	1	2	3
1,000,000 & Over	2	2	1				1	1		2	1

TABLE #7

Note: See Footnote Page

Footnote: (Table #7)

Column 1 - 0.4 gr/cu ft of gas calculated to 12% CO_2 - combustion.

Column 2 - Process weight table for other than combustion.

Column 3 - 0.85 lb/1000 lb of gas - adjusted to 50% excess air.

Column 4 - Not more than 0.2 lb of dust larger than 44 μ/1000 lb of gas.

Column 5 - 0.35 gr/cu ft at 500°F - not > 50% excess air.

Column 6 - 0.75 gr/cu ft at 500°F - not > 0.2 gr/cu ft > 44 μ - not > 50% excess air.

Column 7 - 0.30 gr/cu ft at 500°F.

Column 8 - 0.85 lb/1000 lb - adjusted 12% CO_2.

Column 9 - 0.2 lb/1000 lb not > 44 μ.

Note: Some communities have specific provisions relating to particulate matter from combustion or noncombustion processes.

These emission limits attempt to prevent excessive dilution of the stack effluent which would violate the intent of the ordinance. Further examination of the remaining limits or standards indicates a wide variation in the quantity of dusts permitted to be emitted from the stacks. In some cases a provision is contained with regard to size, limiting particulate matter dimensions. Not more than 0.40 lbs. of particulate matter per 1,000 lbs. of gases should be retained on the 325-mesh U. S. standard sieve. In others, there are specific provisions relating to industrial dusts and fumes which limit emissions on the basis of the weights of material processed.

Review of the ordinances of 32 communities with less than 50,000 population showed 63 per cent did not have any ordinance provision specifically dealing with dust or fly ash. Analysis of ordinance provisions, where there is greater industrial activity, indicates that the problems of dust emission control have received greater attention. Although approximately 45 per cent of the ordinances reviewed provide for control of dust emission, it is important to recognize that such provisions generally impose responsibility for determination of such emissions. This, in turn, requires the availability of adequately trained personnel.

Other Standards:

In addition to specific dust emission limits, the emission of other contaminants is controlled by a general provision relating to an air pollution nuisance and one which prohibits the discharge of such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any person or the public or which endangers the

comfort, repose, health or safety of any person or the public or which causes or has a natural tendency to cause injury or damage to business or property. Although this is a highly inclusive provision, its effectiveness is dependent upon the ability of the enforcement agency to demonstrate that a nuisance did exist. Under conditions which may be transitory in nature, the establishment of existence of a nuisance is difficult. In spite of the handicaps indicated, the inclusion of such provisions is desirable, provided that the local governments have such authority delegated to them by the State constitution, or statutory provisions, or by means of a local charter. This provision was included in 74 per cent of the ordinances reviewed (Table 8).

It is noted that only 18 out of 110 community ordinances reviewed had a provision establishing maximum limits on solid fuel's volatile content (Table 8). The range of maximum volatility permissible varies from 20 to 26 per cent, the majority using 23 per cent as the limit.

In connection with the establishment of limitations for specific contaminants other than smoke and dusts, only 3 of the 110 ordinances reviewed restricted the emission of sulfur compounds calculated as sulfur dioxide in each instance to 0.2 per cent by volume (Table 8).

Permits and Fees:

One of the principal devices for control of air pollution sources, specifically fuel burning, is the requirement of installation permits prior to the construction, installation, or alteration of such equipment. Generally, plans and specifications are required to be submitted for review

AIR POLLUTION NUISANCES & OTHER STANDARDS

OF 110 CITIES HAVING AIR POLLUTION ORDINANCES

Population Group	A.P. Nuisance	Fuel - (% Volatility) 20	21	23	24	26	SO_2
Under 50,000	22	1		2			
50,000 - 99,000	16	2	1				1
100,000 - 199,000	13			2			1
200,000 - 499,000	14	1		1		1	
500,000 - 999,000	10	1		3		1	
1,000,000 & Over	6			1	1		1
TOTAL	81			18			3
% of Ordinance Reviewed	74%			16%			3%

TABLE #8

and approval to the air pollution control agency before a permit is issued. Upon completion of installation and prior to actual use, an operation permit or certificate may be issued. The intent of such provisions is of a preventive nature and, to this extent, has merit. Of course, it also provides a means of registering point sources of possible air pollution. This procedure does place considerable responsibility upon the control authorities, both administratively and technically.

On the basis of the ordinances under review, we find that 65 per cent provide for issuance of an installation permit and 60 per cent require submission of plans and specifications; however, only 48 per cent of the ordinances provide for the issuance of a certification of operation (Table 9). This certificate is usually issued subsequent to inspection of the installation. Very few of the ordinances contain authorization for suspension or revocation of a permit for cause.

It will be observed that approximately 50 per cent of the ordinances reviewed contained provisions for establishment of a fee schedule (Table 9). The criteria for such schedules are variable; in some instances the fees are based upon furnace volumes; in others, the square feet of direct radiation are used; or BTU per hour output; or area of the grate surface; in others, a simple fee assessment method is utilized depending upon the type of consumer involved.

Severability Clause:

Only 50 per cent of the communities under consideration had a separability or severability clause included in their ordinances (Table 10).

The failure to include a clause dealing with the legality of the ordinance was common in all population groups with a greater preponderance

PERMITS & FEES REQUIRED

IN 110 CITIES HAVING AIR POLLUTION ORDINANCES

Population Group	Plans & Specs	Installation	Operation	Fees
Under 50,000	14	14	11	12
50,000 - 99,000	12	12	10	10
100,000 - 199,000	11	11	7	10
200,000 - 499,000	12	12	9	9
500,000 - 999,000	10	10	10	10
1,000,000 & Over	7	7	6	5
TOTAL	66	66	53	56
% of Ordinances Reviewed	60%	60%	48%	51%

TABLE #9

Note: Certificates of Operation, where required, are issued after inspection of installation or alteration, also as a result of annual inspections (23.5%)

in the smaller groups. The desirability of including a clause of this type is obvious. It prevents the possibility of nullifying the effectiveness of the entire ordinance in the event of court ruling against the administrative agency from an action concerning a section, clause, or sentence of the ordinance.

Variances:

The granting of variances is provided for in only 29 of the 110 ordinances reviewed or approximately 26 per cent (Table 10). This device permits the granting of a variation from compliance with certain requirements of the ordinance concerned. Normally, the issuance of a variation is dependent upon the weighing of the equities involved and the advantages and disadvantages to the residents of the community and to any lawful business, occupation, or activity involved, resulting from requiring compliance with said requirements or resulting from granting a variance.

Sale of Fuel-Burning Equipment:

Some communities utilize a provision in their ordinance which requires the reporting of sales of fuel-burning equipment by the seller. This provision may be in addition to the requirement for installation permits. Generally, such reporting exempts equipment used in private residences. Only 18 per cent of the ordinances reviewed contained such a provision (Table 10). The distribution indicates more frequent inclusion of this provision in higher population groups. A provision of this type usually requires additional clerical assistance and the cooperation of persons selling such equipment. The relative value of requiring reporting of sales of fuel-burning equipment is open to considerable debate.

MISCELLANEOUS ORDINANCE PROVISIONS

IN 110 CITIES HAVING AIR POLLUTION ORDINANCES

Population Group	Separability Clause	% Group	Variance Authority	% Group	Reporting Sale of Equipment	% Group
Under 50,000	11	34	4	13	4	13
50,000 - 99,000	13	50	9	35	3	12
100,000 - 199,000	13	68	6	32	3	16
200,000 - 499,000	9	56	1	6	3	19
500,000 - 999,000	5	50	5	50	4	40
1,000,000 & Over	4	57	4	57	3	43
TOTAL	55		29		20	
% of Ordinances Reviewed	50%		26%		18%	

TABLE #10

ENABLING AUTHORITY

It has been reported on the basis of a recent survey that air pollution control agencies were created by certain legal devices as follows:

State Law	17%
Local Charter	8%
Local Ordinance	79%
Board Regulation	2%
Administrative Order	2%
Other	3%

Note: In some cases more than one device was employed which accounts for the total percentage exceeding 100.

Further analysis indicates that the local ordinance was the legal device used most frequently for establishment of the basic legal authority for an air pollution control program of the community.

In another recent study, it was concluded that approximately 10,000 communities in the United States have local air pollution problems. By breaking down this estimate with respect to population and urbanization and by subtracting from this breakdown a similar one for the number of these communities which already have some form of specific air pollution control legislation, it is found that there are approximately 7,500 jurisdictions in which there is need for some form of legislation. It is further estimated that over 95 per cent of this need lies in communities of less than 25,000 population.

The consideration of legislation for the control of air pollution at all levels of government requires the determination of a need for such legislation. Logically, following such determination, is the drafting of the legislative provisions. In this connection, certain broad guidelines are desirable. A basic criterion for the inclusion of a provision is that it will aid in accomplishing the purpose of the legislation, recognizing the equities involved. It has been the effort of most legislative acts to promote equity for all concerned on the concept that the amounts of air contaminants should be limited so that there will not be "too much," but permitting the atmosphere to function as a receptor of such materials to the limits of its capacity. The fundamental problem to be resolved is the establishment of reasonable limits which prevent any health, economic, or technical hazards based on an evaluation of the factors affecting air pollution levels of the area concerned.

As indicated earlier, legislation is the effort of a legal entity to meet a problem of significant importance to it. Essentially, it provides a tool, but the successful utilization of this tool is dependent upon competent administration of the control program. A number of the ordinances reviewed failed to pr ide any administration of the control program and some of the ordinances reviewed failed to provide any administrative structure.

POLICE POWERS

Most jurisdictions have basic police powers adequate to abate atmospheric nuisances originating within their own boundaries. There is need for legislative indication as to which governmental unit of the jurisdiction is to exercise these powers. Where this responsibility is

placed is a matter for determination by local and political considerations. However, it is of paramount importance that such responsibility be placed in such a manner that will permit establishment of a competent staff, both in number and specialized training.

It has become generally recognized that the control of air pollution requires consideration of the problem on an area or basin concept, wherein the air pollution area is unique unto itself. Consequently, the legislation may provide a mechanism to achieve control beyond the limits of the jurisdiction concerned. The methods of achieving such control, dependent upon appropriate enabling legislation, might include the establishment of district-wide control involving one or more jurisdictions. It should be emphasized that whatever legislative approach is adopted, it should be based on the magnitude of the problem, both in terms of the area involved and the levels of air contaminants present. It is obvious that acceptance of the "concept of uniqueness," in turn, requires that legislation should be specifically adapted to meet the problems of the jurisdiction or area rather than the adoption of so-called model ordinances.

STATE LEGISLATION

Although organized State air pollution control activities have not been common, there has been an increasing interest in such programs in recent years. This interest has been accompanied, or perhaps has been generated, by acute episodes of air pollution which have caused human death and illness, by increasing incidence of irritative effects, nuisance and damage to agriculture and structures, and by increasing cognizance of the complexity of the technical problems involved in the control of air

pollution. There has been increasing demand for action at the State level to supplement the recognized local legal responsibilities for air pollution control. In fact, in a great majority of the States, more and more effort is being made to assist local governments in the solution of their air pollution problems even where specific authorizing legislation or funds specifically appropriated for this purpose are lacking.

Of the several laws specifically authorizing comprehensive State air pollution control programs, all except one have been enacted since 1954. There is considerable variability among these enactments. There has been relatively little operating experience with these laws, and the circumstances vary in the several States involved.

In oregon, New Jersey, and New York, the new laws establish an Air Pollution Control Authority, Commission, or Board within the State health departments. In Massachusetts, the law places authority in the State Department of Public Health without the creation of any special boards or commissions. In California, the law authorizes the State Department of Public Health to maintain a program of air sanitation consisting principally of surveillance and extension of technical assistance.

The laws of Massachusetts, New Jersey, New York, and Oregon give the State agency power to promulgate rules and regulations related to the control of air pollution throughout the State, and to outline procedures for dealing with violations. In addition, in Massachusetts, rules and regulations may be promulgated by the State agency for application in a specific town only; a similar provision in the New Jersey law permits the

State agency to promulgate rules and regulations specifically for controlling air pollution in those areas of the State which have pollution problems. The recently enacted legislation of the State of New York provides for a two-year period of study of the problem by the Air Pollution Control Board prior to promulgation of rules and regulations or codes. In each of these States, although the health department administers the law, that agency is not limited to considerations of the effects of air pollution on health.

The Massachusetts and New Jersey laws deal with the relationships between the State agency and local governmental units in some detail. In Massachusetts, municipalities are authorized to regulate air pollution within their respective boundaries, with the rules and regulations subject to review by the State Department of Public Health. The New Jersey law charges the State agency to "organize a county air pollution control association" in each county where it is considered advisable.

INTERSTATE COMPACTS

In many areas air pollution problems involve two or more States and another device of government is necessary to achieve the desired results. The device is one provided in Article 1, Section 10, Clause 3, of the United States Constitution, the "Compact Clause." This clause reads "no State shall, without the consent of Congress, enter into any agreement or compact with another State, or with a foreign power."

We have available to us a mechanism for positive cooperation among the States of the Union through the compact clause. We are experiencing

a growing need for joint State action to meet problems that, although local in character, are beyond the jurisdictional reach of any one State. Although we will deal principally with the interstate compact arrangement, other means of cooperation among States are also available such as the uniform law, the reciprocal law, and the administrative agreement.

The essential elements of the interstate compact are:

a. It is formal and contractual.

b. It is an agreement between the States themselves, similar in content, form, and wording to an international treaty, and usually embodied in State law in a separate document called the "compact."

c. In certain cases, consent of Congress is necessary.

d. The compact takes precedence over ordinary State statutes.

e. It can be enforced by suit in the Supreme Court of the United States.

In 1935, Congress approved an interstate compact between the States of New York, New Jersey, and Connecticut for the purpose of abating existing water pollution in the waters around New York Harbor. Pursuant to the compact, the three States set up the Interstate Sanitation Commission. On August 3, 1956, Congress, by joint resolution, amended its earlier action and consented to the States of New York, New Jersey, and Connecticut conferring upon the Interstate Sanitation Commission the power to make studies of smoke and air pollution within any and all of the territory served by the Commission. (Connecticut, the third party to the original compact, agreed to the study by the Commission provided it did not become financially liable for such undertaking.)

This is a historic step in that it is the first time a number of States acted together through the means of interstate compact to study a common air pollution problem.

CONCLUSION

Experience in the operation of air pollution control programs reveals the need for developing ordinances which meet the needs of the area of jurisdiction rather than the adoption of so-called model air pollution ordinances.

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